

DESCRIPTION OF A MICROPTEROUS FLY OF THE FAMILY
PHORIDÆ ASSOCIATED WITH ANTS.

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IN August, 1911, Mr. E. E. Green found at Peradeniya, associated with predaceous ants of the genus *Lobopelta*, a minute micropterous insect, which he recognized as belonging to the Dipterous family Phoridæ. He has been kind enough to entrust me with its description in *Spolia Zeylanica*.

The Phoridæ* are a family as yet little known so far as the Oriental forms are concerned, but Brues† has described several species from India, and others will shortly be described by Brunetti, probably in the "Records of the Indian Museum." Although the majority of the species are provided with ample wings and lead an active life, as a rule feeding on rotting animal and vegetable matter, a considerable number have the wings degenerate or altogether absent. Some of these forms feed on carrion or the slime of snails, while others live as parasites or guests in the nests of ants or termites. The apterous and micropterous forms are very unlike ordinary flies in appearance, rather resembling fleas or minute cockroaches. Certain genera, indeed, have been separated off from the Phoridæ by Wandolleck,‡ who regards them as a distinct family (Stethopathidæ) related to the fleas. In the case of one of these genera, however, namely *Chonocephalus*, Becker§ has associated a winged and not very remarkable male with a wingless and otherwise degenerate female, while in several other genera only the female is known.

In general appearance Mr. Green's specimen resembles a female of *Chonocephalus*, a species of which (only the male) has been found in the Bombay Presidency, and is described by Brues; but in structure it is more closely allied to *Psyllomyia*, an African genus, of which the only known species (*P. testacea*) was described by Loew|| many years ago, and has not apparently been re-discovered. It was taken in the nest of ants belonging to the genus *Dorylus*.

It seems probable that the micropterous and apterous species of Phoridæ will ultimately be found to fall naturally into several

* See Brues in *Genera Insectorum*: Diptera, Fam. Phoridæ, fasc. 44 (1906).

† *Ann. Nat. Mus. Hungarici*, III., p. 539 (1905).

‡ *Zool. Jahrb. (Syst. Abth.)*, XI., p. 412 (1898).

§ "Die Phoriden," *Abh. k. k. zool.-bot. Gesch. Wien*, p. 86 (1901).

|| *Wien ent. Monatschr.*, I., p. 54, plate I., figs. 22-25 (1857).

sub-families or groups of genera, when sufficient material has been examined for a proper consideration of their taxonomy. *Psyllomyia* and the new genus which it is necessary to found for Mr. Green's species, would probably form one such group; *Stethopathus*, *Wandollekia*, and *Chonocephalus* a second; *Platyphora*, *Ænigmaticus* (probably the female of *Platyphora*), and *Ænigmatistes** a third, while other genera (e.g., *Termitoxenia*) appear to stand by themselves. Most of these genera are, however, known only from females, and from very few specimens at that, and it is possible that the discovery of males would in several cases completely upset a classification based solely on degenerate females, among which the phenomenon of convergence has possibly been manifested. It is even possible that the males of some of these genera are already known under other generic names. The new genus here described must, therefore, be regarded as a provisional one, until the corresponding male has been discovered, Mr. Green's specimen, its type, being clearly a female.

RHYNCHOMICROPTERON, gen. nov.

♀ Minute Phoridæ with degenerate, almost linear wings, degenerate eyes, no ocelli, an elongate elbowed proboscis, a swollen abdomen, of which all the segments are transverse and nearly all the integument soft, three large forwardly directed bristles on each side of the head and none on any part of the thorax.

♂ unknown.

The new genus appears, so far as can be judged from Loew's description and figures, to differ from *Psyllomyia* chiefly in the following points:—

- (1) The abdomen is soft.
- (2) The wings are much narrower.
- (3) The legs are entirely covered with hairs.
- (4) There are no chætæ on the thorax.
- (5) The cheeks bear no downwardly directed bristles.

The two genera agree in the general form of the proboscis, although in *Rhynchomicropteron* the bend is further from the base than in *Psyllomyia*; but it is not possible with the material at my disposal to investigate the minute structure of this organ.

R. PULICIFORME, sp. nov.

♀ The habit is stout but moderately compressed, the insect having a certain external resemblance to a flea. The head, thorax, and legs are deep brown, the abdomen white tinged with brown, the antennæ and palpi yellow; all the larger bristles are black; the length is about 1 mm.

* This genus is not described in the *Genera Insectorum*; see Shelford in the *Journ. Linn. Soc. (Zool.)*, XXX., p. 150, plate XXII. (1908).

Head.—The head is large and broad, depressed as a whole, but with both the dorsal and the ventral surfaces convex; no lateral surface can be distinguished. As viewed from above, the outline is rounded in front and truncated posteriorly, the sides being nearly straight. The anterior third, as seen from the side, is deeply concave, and is occupied by the antenna, the third joint of which is of great relative size and spherical in form, entirely concealing the first and second joints; near its apex it bears a very long and slender minutely pilose arista. The lower margin of the antennal cavity forms a sharp ridge which is produced forwards just in front of the eye into a triangular projection. The eye is small and appears to be pigmented very little if at all more deeply than the surrounding integument; it consists of about twelve facettes, which are by no means prominent, and is situated laterally but below the margin of the head, being narrowly oval in outline and horizontal in position. The palpi are large and conspicuous, somewhat irregularly club-shaped in form and armed with four large bristles on the inner margin and at the tip, being also sparsely clothed with minute recumbent hairs. The proboscis is very long and slender, and, except at the base, has a cylindrical form throughout its length. It is divided into three unequal regions: (1) A short flat triangular region lying on the ventral surface of the head between the palpi; (2) a proximal cylindrical portion which is the longest, running parallel to the base of the sternum nearly as far as the coxæ of the intermediate legs: it is separated from the third region by a distinct band. The third region (3) points downwards and backwards between the legs. There are a few minute and apparently soft hairs at the tip, but only very small and ill-developed fleshy expansions; no trace of any organ that could be used for stabbing or cutting is apparent.

The whole of the dorsal surface of the head is covered sparsely with minute recumbent hairs, all of which point backwards. There are about twelve small forwardly directed bristles on each side of the ventral surface below and behind the eye. On each side of the head there are three much larger bristles, all of which are directed forwards. One is situated just in front of the eye, another outside each palpus, and the third near the posterior end of the ventral surface of the head beside the proboscis. The direction of the two latter is somewhat oblique.

The integument of the head is minutely and regularly punctured, but that of the proboscis is smooth.

Thorax.—As seen from above, the pronotum, which conceals the other segments, is longer than the head, but distinctly transverse. It is divided longitudinally by a deep mid-dorsal groove, and near the anterior border on each side there is a small circular pit. A comparatively large chitinous plate on the dorsal surface of the abdomen, narrowly separated from the posterior margin of the

pronotum, represents the scutellum. It is broadly triangular in form, except that the apex is rounded, and has a smooth surface sparsely covered with minute recumbent hairs. Similar hairs occur on the dorsal surface of the thorax proper, the integument of which is sculptured in the same manner as that of the head. In lateral view the thorax is distinctly divided into three segments; the metathorax extends backwards for some distance on the sides of the abdomen, forming an acute triangle with the two long sides somewhat curved; the bases of the posterior legs are situated at about one-third of the length of the whole insect, if the measurement is taken from in front backwards.

Wings.—The wings, although very narrow, are distinctly spindle-shaped and acutely pointed. They lie parallel to the sides of the body with the tips pointing obliquely downwards and reaching a point some little distance behind the level of the third coxæ. No veins are apparent, but there are three distinct rows of minute bristles running along the surface. The halteres are almost cylindrical; they are situated on the lateral surface of the metathorax.

Legs.—The legs are short and stout. In all the femora are dilated, but only compressed to a moderate extent; they are longer as well as much broader than the tibiæ, the latter being cylindrical and much shorter than the tarsi, the first joint of which is the longest; the tarsi are longer than either the tibiæ or the femora. The coxæ of the first pair of legs are almost as long as the femora, which they resemble in form; those of the intermediate and posterior legs are short, but they are rendered conspicuous in the case of the intermediate pair by bearing a bunch of stout but almost recumbent black bristles on the anterior face. Similar, but much shorter, bristles also occur on the posterior coxæ. The whole of the surface of the limbs is clothed with short recumbent hairs, and the intermediate and posterior tibiæ bear several short bristles disposed in a semicircle at the tip; the posterior tibiæ also bear in the same position a single stout bristle or spur. There are two slender, strongly curved, smooth-edged claws on each foot; the pulvillus consists of a slender longitudinal process bearing a number of elongate downwardly-directed branch-like projections, and the empodium is bristle-like.

Abdomen.—The abdomen is considerably swollen, but tapers towards the tip and is much longer than broad or deep; its segmentation is obscure. The whole of the integument (with the exception of the scutellum) is soft, almost colourless and naked. The external genitalia form a short projecting tube, the dorsal surface of which is divided into two short lobes bearing long curved bristles; similar bristles also project from the ventral part of the tube.

Habitat.—Peradeniya, Kandy District, Ceylon; altitude about 1,500 ft.

